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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BERNARD YEH, BUFORD M. GUY III,
MOHAMMED B. ZAIDI, AND SAIKAT ROY SAHAROY

Appeal 2007-3433
Application 09/851,725¹
Technology Center 2100

Decided: May 27, 2008

Before JOSEPH L. DIXON, ALLEN R. MACDONALD, and
CAROLYN D. THOMAS. *Administrative Patent Judges.*

THOMAS, C., *Administrative Patent Judge.*

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1-30 mailed May 12, 2006. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Application filed May 8, 2001. The real party in interest is Intel Corporation.

A. INVENTION

2 Appellants invented a system, method, and sets of instructions that
3 relate to multi-computer systems performance testing. The computer system
4 under test executes server and client code and transmits data packets
5 according to one or more standard network communications protocols.
6 Thread execution time is tracked along with the number of transactions
7 completed between the execution of server code and the execution of client
8 code. With this data, the performance of the computer system acting solely
9 as a server or as a client can be determined. (Spec., Abstract.)

B. ILLUSTRATIVE CLAIM(S)

12 The appeal contains claims 1-30. Claims 1, 3, 9, 11, 17, and 27 are
13 independent claims. Claims 1 and 3 are illustrative:

14 1. A protocol performance test method, comprising:
15 measuring performance of a multi-computer communication
16 protocol on a single computer system, wherein said single computer
17 system emulates a network configuration having a server and a client,
18 and wherein measuring said performance of said multi-computer
19 communication protocol on said computer system includes

20 executing server code on said single computer system;
21 executing client code on said computer system; and
22 measuring performance data for said single computer system

24 3. A protocol performance test method, comprising:
25 operating a computer system under test as a server and a client
26 to emulate a network configuration;
27 executing server code on said computer system under test
28 according to a multi-computer communication protocol;

1 executing client code on said computer system under test
2 according to said multi-computer communication protocol; and
3 determining performance data for said computer system under
4 test.

5

6 C. REFERENCES

7 The references relied upon by the Examiner in rejecting the claims on
8 appeal are as follows:

9 Yu	US 5,636,371	Jun. 3, 1997
10		
11 Fletcher	US 6,269,401 B1	Jul. 31, 2001
12		(Filed Aug. 28, 1998)
13		
14 Cota-Robles	US 2001/0056456 A1	Dec. 27, 2001
15		(Filed Dec. 27, 2001)
16		
17		

18 D. REJECTIONS

19 The Examiner entered the following rejections which are before us for
20 review:

21 Claims 1-6, 9-14, 17-20, and 29-30 are rejected under
22 35 U.S.C. § 103(a) as being unpatentable over Fletcher in view of Yu; and
23 Claims 7, 8, 15, 16, and 21-28 are rejected under 35 U.S.C. § 103(a)
24 as being unpatentable over Fletcher in view of Yu and further in view of
25 Cota-Robles.

26

27 II. PROSECUTION HISTORY

28 Appellants appealed from the Final Rejection and filed an Appeal
29 Brief (Br.) on October 23, 2006. The Examiner mailed an Examiner's

1 Answer (Ans.) on January 16, 2007. No Reply Brief is indicated in the
2 record.

3

4 III. ISSUE

5 Whether Appellants have shown that the Examiner erred in rejecting
6 claims 1-30 as being obvious over the combination of cited references.

7

8 IV. FINDINGS OF FACT

9 The following findings of fact (FF) are supported by a preponderance
10 of the evidence.

11 *Claim Construction*

12 1. The Specification discloses that “a single computer system” is
13 defined as the server computer system or one of the client computer systems
14 (3:7-8.)

15 2. The Specification discloses that the “computer system under test
16 31 . . . includes at least one processor 31a and memory 31b.” (5:12-13.)

17 3. The Specification discloses that “data packets are transferred
18 between the execution of server and client threads through sockets. A socket
19 is a software concept known in the art that provides a communication
20 input/output for software code execution.” (6:12-14.)

21 *Fletcher*

22 4. Fletcher discloses that “concurrently with the collection of the
23 network performance statistics, system information is collected by each host
24 computer system regarding its own capabilities and performance. In other
25 words, client computer system 110 measures and stores system information

1 regarding its capabilities and performance, and server computer system 250
2 measures and stores system information regarding its capabilities and
3 performance.” (Col. 24, ll. 19-26.)

4 5. Fletcher discloses a “method for monitoring communication
5 performance in a communication network . . . In one embodiment, a
6 computer system of a communication network measures . . . network
7 performance statistics . . . The computer system also measures . . . system
8 performance statistics and system parameters.” (Abstract.)

9 6. Fletcher discloses that “a host computer system (e.g., client
10 computer system 110 or server computer system 250) measures and stores
11 network performance statistics. The host computer system also measures
12 and stores historical information including system information consisting of
13 system performance statistics and system parameters.” (Col. 6, ll. 38-43.)

Yu

15 7. Yu discloses that a “local host data processing system operating
16 under the control of a local host operating system includes components of a
17 hosted operating system. . . . Host and hosted operating systems share the
18 same TCP/IP network protocol stack. A virtual network mechanism is
19 configured within the local host system to be operatively coupled to the host
20 network protocol stack and provide access to well-known port application
21 programs.” (Abstract.)

22 8. Yu discloses that “the host system also includes the components of
23 a hosted operating system components, such as for example, an emulator.”
24 (Col. 3, ll. 7-9.)

1 9. Yu discloses that the “emulated system is a multiprogrammed
2 multiprocessor system. The facilities illustrated in Fig. 1 include a listener
3 module **280**, a file management facility **282**, a socket monitor call command
4 handler unit 284, and an ES socket library **286** which are arranged as
5 shown.” (Col. 6, ll. 37-42.)

6 10. Yu discloses that a “command handler unit (not shown) contains
7 the routines that respond to user commands entered via a terminal or
8 program. In response to such commands, the command handler unit routines
9 invoke the appropriate tasks for executing such commands.” (Col. 6, l. 67 to
10 col. 7, l. 4.)

11 11. Yu discloses that “the components **92** through **98** collectively can
12 be viewed as a socket server for emulator **80** which is used to communicate
13 over the host system socket layer.” (Col. 8, ll. 25-28.)

14 12. Yu discloses that “the teachings of the present invention are not
15 limited to requiring that the other system or party to the communications,
16 typically an executing client program, be located in a physically separate
17 computer system. The communications could take place between the host
18 system and one of the hosted systems” (Col. 4, ll. 14-19.)

19

20 V. PRINCIPLES OF LAW

21 Appellants have the burden on appeal to the Board to demonstrate
22 error in the Examiner’s position. See *In re Kahn*, 441 F.3d 977, 985-86
23 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a
24 rejection [under § 103] by showing insufficient evidence of *prima facie*
25 obviousness or by rebutting the *prima facie* case with evidence of secondary

1 indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355
2 (Fed. Cir. 1998)).

3 “Section 103 forbids issuance of a patent when ‘the differences
4 between the subject matter sought to be patented and the prior art are such
5 that the subject matter as a whole would have been obvious at the time the
6 invention was made to a person having ordinary skill in the art to which said
7 subject matter pertains.’” *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727,
8 1734 (2007). The question of obviousness is resolved on the basis of
9 underlying factual determinations including (1) the scope and content of the
10 prior art, (2) any differences between the claimed subject matter and the
11 prior art, (3) the level of skill in the art, and (4) where in evidence, so-called
12 secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18
13 (1966). *See also KSR*, 127 S. Ct. at 1734 (“While the sequence of these
14 questions might be reordered in any particular case, the [Graham] factors
15 continue to define the inquiry that controls.”)

16 The reasoning given as support for the conclusion of obviousness can
17 be based on “interrelated teachings of multiple patents; the effects of
18 demands known to the design community or present in the marketplace; and
19 the background knowledge possessed by a person having ordinary skill in
20 the art.” *KSR*, 127 S. Ct. at 1740-41. *See also Dystar Textilfarben GmbH v.*
21 *C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2007).

22 We note our reviewing court has recently reaffirmed that:

23 [A]n implicit motivation to combine exists not only when a suggestion
24 may be gleaned from the prior art as a whole, but when the
25 ‘improvement’ is technology-independent and the combination of
26 references results in a product or process that is more desirable, for
27 example because it is stronger, cheaper, cleaner, faster, lighter,

smaller, more durable, or more efficient. Because the desire to enhance commercial opportunities by improving a product or process is universal-and even common-sensical-we have held that there exists in these situations a motivation to combine prior art references even absent any hint of suggestion in the references themselves. In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him *capable* of combining the prior art references.

Leapfrog Enters., Inc. v. fisher-Price Inc., 485 F.3d 1157, 1162 (holding it “obvious to combine the Bevan device with the SSR to update it using modern electronic components in order to gain the commonly understood benefits of such adaptation, such as decreased size, increased reliability, simplified operation, and reduced cost.”)

VI. ANALYSIS

Grouping of Claims

In the Brief, Appellants argue claims 1-6, 9-14, 17-20, and 29-30 as a group (Br. 6-13). In other words, for each of independent claims 1, 3, 9, 11, 17, and 27, Appellants merely repeat the same argument. Thus, the Board selects representative claim 1 to decide the appeal for this group. 37 C.F.R. § 41.37(c)(1)(vii)(2006). Accordingly, the remaining claims in this group stand or fall with claim 1.

Appellants argue claims 7, 15, and 21 as a group (Br. 13). However, for claims 7, 15, and 21, Appellants merely repeat the same argument made for claim 1. We will, therefore, treat claims 7, 15, and 21 as standing or falling with claim 1.

1 Appellants argue claims 8, 16, and 22 as a group (Br. 13-14).
2 However, for claims 8, 16, and 22, Appellants merely repeat the same
3 argument made for claim 1. We will, therefore, treat claims 8, 16, and 22 as
4 standing or falling with claim 1.

5 Appellants argue claims 23-28 as a group (Br. 14-15). However, for
6 claims 23-28, Appellants merely repeat the same argument made for claim 1.
7 We will, therefore, treat claims 23-28 as standing or falling with claim 1.

⁸ See 37 C.F.R. § 41.37(c)(1)(vii). See also *In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991).

The Board's Claim Construction

2 "Our analysis begins with construing the claim limitations at issue."
3 *Ex Parte Filatov*, No. 2006-1160, 2007 WL 1317144, at *2 (BPAI 2007).

4 Claims are given their broadest reasonable construction “in light of
5 the specification as it would be interpreted by one of ordinary skill in the
6 art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir.
7 2004).

8 Our reviewing court stated in *Phillips v. AWH Corp.*, 415 F.3d 1303,
9 1315 (Fed. Cir. 2005), *cert. denied, sub nom. AWH Corp. v Phillips*, 126 S.
10 Ct. 1332 (2006):

1 The claims, of course, do not stand alone. Rather, they are part of 'a
2 fully integrated written instrument,' *Markman*, 52 F.3d at 978,
3 consisting principally of a specification that concludes with the
4 claims. For that reason, claims 'must be read in view of the
5 specification, of which they are a part.' *Id.* at 979. As stated in
6 *Vitronics*, the specification 'is always highly relevant to the claim
7 construction analysis. Usually, it is dispositive; it is the single best
8 guide to the meaning of a disputed term.' 90 F.3d at 1582.

1 From our review of the original Specification, we find that Appellants
2 have identified specific definitions for a “single computer system” (FF 1)
3 and a “computer system under test” (FF 2). Therefore, we shall construe a
4 “single computer system” to include any system that is capable of working
5 as either a server computer system or one of the client computer systems. In
6 addition, we shall construe a “computer system under test” as any system
7 that includes at least one processor and a memory.

8 Appellants argue that Fletcher does not disclose testing a single
9 computer system (Br. 10). We find that only independent claims 1 and 9
10 recite the phrase “on a single computer system”, the other independent
11 claims, e.g., claims 3, 11, 17 and 27, merely recite “a computer system”.
12 Thus, any arguments regarding a “single computer system” shall apply only
13 to those claims containing the limitation.

14

The Obviousness Rejection

15 We now consider the Examiner’s rejection of claims 1-30 under 35
16 U.S.C. § 103(a) as being obvious over the combination of cited references.

17 "Having determined what subject matter is being claimed, the next
18 inquiry is whether the subject matter would have been obvious." *Ex Parte*
19 *Massingill*, No. 2003-0506, 2004 WL 1646421, at *3 (BPAI 2004). The
20 question of obviousness is "based on underlying factual determinations
21 including . . . what th[e] prior art teaches explicitly and inherently . . ." *In*
22 *re Zurko*, 258 F.3d 1379, 1383 (Fed. Cir. 2001) (citing *Graham v. John*
23 *Deere Co.*, 383 U.S. 1, 17-18 (1966); *In re Dembicza*k, 175 F.3d 994, 998
24 (Fed. Cir. 1999); *In re Napier*, 55 F.3d 610, 613 (Fed. Cir. 1995)). "In

1 rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden
2 of presenting a *prima facie* case of obviousness." *In re Rijckaert*, 9 F.3d
3 1531, 1532 (Fed. Cir. 1993) (citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed.
4 Cir. 1992)). "*A prima facie* case of obviousness is established when the
5 teachings from the prior art itself would appear to have suggested the
6 claimed subject matter to a person of ordinary skill in the art." *In re Bell*,
7 991 F.2d 781, 783 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048,
8 1051 (CCPA 1976)).

9

10 *Fletcher in view of Yu*

11 Appellants contend that "Fletcher does not disclose testing a single
12 computer system. Instead, Fletcher discloses monitoring communication
13 performances in a communication network comprising communication
14 systems communicatively coupled to each other with communication
15 equipment." (Br. 10.) Appellants further contend that "the section of Yu
16 cited by the Examiner does not disclose a single computer system emulating
17 a server and a client. Instead, Yu discloses a local system and a remote
18 system in which a client process is run on the local system and a server
19 process is run on the remote system." (Br. 12.)

20 The Examiner found that "Fletcher does not disclose (re. Claims 1, 3,
21 9, 11, 17) a single computer system emulating a server and a client . . ." (Ans. 6). Thus, the Examiner relied upon Yu, and found that Yu discloses
22 "a virtual network mechanism that allows a single host system to emulate
23 multiple server and client processes, allowing data to be passed between said

1 processes, and executing server and client code in the same host system.”

2 *Id.* We agree.

3 While we agree with the Examiner that Fletcher may not disclose a
4 single computer system emulating a server and a client (FF 4), as noted
5 *supra*, not all of the claims contain such a limitation. Further, Fletcher
6 discloses a method for monitoring performance in a communication
7 network, including network performance and system performance using a
8 client computer and a server computer (FF 4-6).

9 Yu discloses “host and hosted operating systems” configured within a
10 single host system whereby a virtual network mechanism within the host
11 functions as another LAN to provide access to port application programs
12 using an emulator (FF 7-8). Yu’s emulator is a multiprogrammed
13 multiprocessor system that includes a listener module for initiating user
14 tasks in response to user commands (FF 9-10). Yu further discloses that the
15 emulator includes as a server portion (FF 11). In addition, Yu discloses that
16 its system does not require that the other system or party to the
17 communications be located in a physically separated computer system (FF
18 12).

19 Thus, we find that Yu discloses a single host system that includes an
20 emulator and a virtual network mechanism that emulates a network
21 configuration having a server and a client.

22 Therefore, we do not find that Appellants have shown error in the
23 Examiner’s rejection of illustrative claim 1. Instead, we find the Examiner
24 has set forth a sufficient initial showing of obviousness.

25

Fletcher teaches away from a single computer

2 Appellants contend that “Fletcher teaches away from a single
3 computer system emulating a server and a client because Fletcher teaches
4 monitoring communication performance *in a communication network*
5 *comprising communication systems communicatively coupled to each other*
6 *with communication equipment. . . .* Fletcher uses separate computer systems
7 for the client and the server and a physical communication network.” (Br.
8 11.) We disagree.

9 We find that Fletcher discloses using a client computer and a server
10 computer concurrently (FF 4). However, we do not find, and Appellants do
11 not establish, the Fletcher criticizes, discredits, or otherwise discourages the
12 use of a single computer that can emulate a server and a client computer.
13 “[T]he prior art's mere disclosure of more than one alternative does not
14 constitute a teaching away from any of these alternatives because such
15 disclosure does not criticize, discredit, or otherwise discourage the solution
16 claimed ...” *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004).

No motivation to combine Fletcher and Yu

19 Appellants contend that “there is nothing in the teachings of Fletcher
20 (monitoring communication performance in a communication network) that
21 would motivate one to combine it with the teachings of executing programs
22 that share a common communications protocol stack as disclosed in Yu.”
23 (Br. 9.) Appellants further contend that “the Examiner has taken the
24 position, unsupported by the references of record, that Fletcher can be
25 modified to include such limitations without affecting the performance of

1 the Fletcher system. There is no teaching or suggestion of such a
2 modification in Fletcher." (Br. 10-11.)

3 The Examiner found that:

4 Fletcher, in describing the computer system(s) being monitored . . .
5 does not in any manner present any limitation(s) that would disqualify
6 the computer system presented by Yu. . . . The test for obviousness is
7 not whether the features of a secondary reference may be bodily
8 incorporated into the structure of the primary reference. . . . Rather,
9 the test is what the combined teachings of those references would
10 have suggested to those of ordinary skill in the art.

11

12 (Ans. 16-17). We agree.

13 Fletcher discloses monitoring communication performance in a
14 network (FF 5) and Yu discloses a virtual network mechanism that executes
15 both server and client code on a single host system (FF 7). As such, we find
16 that Yu's use of the virtual network mechanism running on a single host
17 system would have suggested to the ordinary skilled artisan to use a single
18 computer system to monitor communication performance as disclosed in
19 Fletcher to *predictably result* in a single computer system that is capable of
20 measuring communication performance by running both server and client
21 code.

22 Therefore, Appellants' allegation that there is insufficient rationale to
23 combine the cited references is not persuasive. The Supreme Court has held
24 that in analyzing the obviousness of combining elements, a court need not
25 find specific teachings, but rather may consider "the background knowledge
26 possessed by a person having ordinary skill in the art" and "the inferences
27 and creative steps that a person of ordinary skill in the art would employ."
28 See *KSR Int'l*, at 1740-41. To be nonobvious, an improvement must be

1 "more than the predictable use of prior art elements according to their
2 established functions." *Id.* at 1740. As set forth in the preceding paragraph,
3 using a virtual network mechanism that executes both server and client code
4 in a single host system is prior art teaching that is being used in a
5 conventional computer system for the known purpose of conducting
6 internetwork communications.

7 It follows that Appellants have not shown that the Examiner erred in
8 concluding that the combination of Fletcher and Yu renders illustrative
9 claim 1 unpatentable.

10

11 *Fletcher, Yu and Cota-Robles*

12 Appellants contend that "Cota-Robles does not teach or suggest the
13 features missing from Fletcher and Yu" (Br. 13-15).

14 As detailed *supra*, the argued features were *not* found to be missing in
15 the combination of Fletcher and Yu. Thus, Appellants argument that Cota-
16 Robles does not cure the deficiencies of Fletcher and Yu is insufficient.

17 We find that the Appellants have failed to show error in the
18 Examiner's rejection. Therefore, we affirm the rejection of claim 1 and of
19 claims 2-30, which fall therewith.

20

21 VII. CONCLUSIONS

22 We conclude that Appellants have not shown that the Examiner erred
23 in rejecting claims 1-30.

24 Thus, claims 1-30 are not patentable.

25

VIII. DECISION

2 In view of the foregoing discussion, we affirm the Examiner's
3 rejection of claims 1-30.

4

5 No time period for taking any subsequent action in connection with
6 this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R.
7 § 1.136(a)(1)(iv) (2006).

8

AFFIRMED

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